IN THE SPECIFICATION

Please insert on page 1, after line 27, the following new paragraph:

The "motion generating machine" used herein is a machine normally called a vibration table that generates translational motion with one degree of freedom. But, here in this application motion generating machine is a machine that generates motion with more than one degree of freedom including both translational and rotational motions.

Please replace the paragraph at page 2, line 27 to page 3, line 3, with the following rewritten paragraph:

Heretofore, the accelerometer is set on the one-axis motion generating machine and the sensitivity axis of the accelerometer is caused to coincide with the direction of the motion generated by a vibration table (motion generating machine) as illustrated in Fig. 3. The concept of enabling the accelerometer to be calibrated most accurately by measuring a motion with a laser interferometer under such set conditions as mentioned above and consequently establishing a standard for measurement of acceleration is officially approved by the Treaty of the Meter as well. Generally, the reference accelerometer is calibrated in accordance with the method embodying this concept.

Please replace the paragraph at page 5, lines 4-6, with the following rewritten paragraph:

[Non-Patent Document 1] Vibration Engineering Handbook, complied by Osamu Taniguchi, published in 1976 by Youkendo, Chapter 13 "Determination of Vibration," 13.3.2 "Calibration of vibration measuring device" (in Japanese)

Please replace the paragraph at page 5, lines 7-8, with the following rewritten paragraph:

[Non-Patent Document 2] ISO (the International Organization for Standardization) 16063-11: 1999 (E) Methods for the calibration of vibration and shock transducers Part 11: Primary vibration calibration by laser interferometer

Please replace the paragraph at page 5, lines 12-13, with the following rewritten paragraph:

[Non-Patent Document 4] ISO 5347 Methods for the calibration of vibration and shock pick-ups: part 11 Testing of transverse vibration sensitivity

Please replace the paragraph at page 5, line 14, with the following rewritten paragraph:

[Non-Patent Document 5] ISO 5347 Methods for the calibration of vibration and shock pick-ups: part 12 Testing of transverse shock sensitivity

Please insert on page 13, between lines 16 and 17, the following new paragraph:

According to the 20th aspect of the invention, the accuracy of the measurement of acceleration is enhanced. By enabling the filter to have a real-time processing function, when the motion of a structure must be suppressed through the control using the signal from the accelerometers, or when the structure possesses an aim to generate a motion using the signals from accelerometers, the accuracy of control through accelerometers is considerably enhanced. Neither the real-time processing performance is required nor a request for the processing time is strong, so the measurement accuracy can be enhanced through processing of the acquired data using the filtering based on the inverse sensitivity matrix concept.

Please delete the formula at page 58, line 1, in its entirety and replace with the following new formula:

(Mathematical 60)

$$= \begin{vmatrix} a_{ix1} & a_{iy1} & a_{iz1} & 0 & 0 & 0 \\ a_{ix2} & a_{iy2} & a_{iz2} & 0 & 0 & 0 \\ a_{ix3} & a_{iy3} & a_{iz3} & 0 & 0 & 0 \\ 0 & 0 & 0 & a_{ix2} & a_{iy2} & a_{iz2} \\ 0 & 0 & 0 & a_{ix1} & a_{iy1} & a_{iz1} \\ 0 & 0 & 0 & a_{ix3} & a_{iy3} & a_{iz3} \end{vmatrix}$$

Please delete the formula at page 72, line 13, in its entirety and replace with the following new formula:

(Mathematical 83)

$$\begin{pmatrix} S_{1,1}(\omega) & \cdots & \cdots & \cdots & S_{1,N}(\omega) \\ \vdots & & & & \vdots \\ \vdots & & & & \vdots \\ S_{M-1,1}(\omega) & \cdots & \cdots & \cdots & S_{M-1,N}(\omega) \\ S_{M,1}(\omega) & \cdots & \cdots & \cdots & S_{M,N}(\omega) \end{pmatrix}$$

Please delete the formula at page 73, line 1, in its entirety and replace with the following new formula:

(Mathematical 84)

$$\begin{pmatrix} C_{1,1} & C_{1,2} & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & C_{1,MN-1} & C_{1,MN} \\ C_{2,1} & C_{2,2} & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & C_{2,MN-1} & C_{2,MN} \\ \vdots & \vdots & \ddots & & & & & & & & \vdots & \vdots \\ \vdots & \vdots & & \ddots & & & & & & & \vdots & \vdots \\ \vdots & \vdots & & & \ddots & & & & & & \vdots & \vdots \\ \vdots & \vdots & & & & \ddots & & & & & \vdots & \vdots \\ \vdots & \vdots & & & & & \ddots & & & & \vdots & \vdots \\ \vdots & \vdots & & & & & & \ddots & & & \vdots & \vdots \\ \vdots & \vdots & & & & & & & \ddots & & \vdots & \vdots \\ \vdots & \vdots & & & & & & & & \ddots & \vdots & \vdots \\ C_{MN-1,1} & C_{MN-1,2} & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & C_{MN-1,MN-1} & C_{MN-1,MN} \\ C_{MN,1} & C_{MN,2} & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & C_{MN,MN-1} & C_{MN,MN} \end{pmatrix} \begin{pmatrix} S_{1,1} \\ \vdots \\ S_{1,N} \\ S_{2,1} \\ \vdots \\ S_{2,N} \\ S_{3,1} \\ \vdots \\ S_{M-1,N} \\ S_{M,1} \\ \vdots \\ S_{M,N} \end{pmatrix} = \begin{pmatrix} d_1 \\ \vdots \\ d_M \\ d_{M+1} \\ \vdots \\ d_{2M} \\ d_{2M+1} \\ \vdots \\ d_{(N-1)M} \\ d_{(N-1)M+1} \\ \vdots \\ d_{NM} \end{pmatrix}$$